

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I and the assertion of claims 1-16 read on the elected species in the reply filed on 3 December 2007 is acknowledged. The traversal is on the ground(s) that the search and examination of the entire application could be made without serious burden and the election of Species requirement is improper because it identifies specific claims as species. This is not found persuasive because there is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics as alleged by the examiner, and because the election is proper as the claims limited to Species (two or more Species are claimed). See MPEP 806.04(f) for the latter.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. The disclosure is objected to because of the following informalities: the misprint of the phrase "Th lectric" in line 1 of page 17. Appropriate correction is required.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested

in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 3-5, 8-10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the recitation "PM" is confusing to its meaning.

In claim 3, the word "type" in the recitation "a straight-flow type", when appended to an otherwise definite term, may render said term indefinite *Ex parte Copenhaver* 109 USPQ 118.

In claim 4, the recitation "the upstream" lacks antecedent basis.

In claim 5, the same is applied to claim 1 to the recitation "PM".

In claim 8, the recitations "the upstream end" and "the circumference surface" lack antecedent basis.

In claim 9, the recitation "the downstream end" lacks antecedent basis.

In claim 10, the recitations "the upstream end", "the radially inner area" and "the outer area" lack antecedent basis.

In claim 12, the recitations "the ratio" and "the diameter" lack antecedent basis.

Claim Rejections - 35 USC § 102 and § 103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1-3 and 13 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tamura et al. (US 6,558,637 B2). Tamura's invention is directed to an exhaust emission purifier. Tamura discloses the purifier comprises a three-way catalyst unit **15** disposed in an exhaust gas passage, wherein the three-way catalyst unit **15** is formed of a honeycomb carrier **21** having a large number of exhaust gas passages and having attached external electrodes **22** and internal electrode **23**, wherein the external electrode **22** is attached to its upper and lower surfaces of the honeycomb carrier **21**, the internal electrode **23** is disposed at the center portion of the honeycomb carrier **21**, insulators **24** attached to the opposite side surfaces of the honeycomb carrier **21**, and an electric field is produced when a voltage is applied to the external and internal electrodes (Fig. 2 and paragraph crossings cols. 6 and 7). Tamura also discloses that particulate matter is one of harmful substances (col. 8, lines 19-21). Though Tamura does not detail that the honeycomb carrier **21** being insulative, however, since the electric field is produced when the voltage is applied to the external and internal electrodes, it is correct to assume that the honeycomb carrier **21** is insulative so that the external and internal electrodes are electrically insulative as if not, there will a short and no electric field is produced. Further, Tamura discloses in Fig. 9 an embodiment with the honeycomb carrier **21** of a dielectric body. As such, Tamura discloses all the structures as claimed. If there is a difference, it will be the intended use of the claimed apparatus for trapping and burning particulate matter. The subject

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matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Tamura's teachings because the manner or method in which such device is to be utilized is not germane to the issue of patentability of the device itself.

9. Claims 4-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura '637 in view of Palekar et al. (US 6,475,350 B2). The difference between Tamura as applied above and the instant claims are the configuration of the recited electrodes. Palekar teaches in a device for treating exhaust gas using plasma assisted catalyst various configurations of opposed electrodes, mesh electrode, the catalyst being alumina promoted by platinum, a porous monolithic catalyst (honeycomb), the catalyst substrate being a dielectric (Figs. 1a-c and 2; col. 11, lines 27-37; col. 11, line 56 through col. 12, line 21). Palekar further teaches in Figs. 4a-b the form of the monolithic with a perforated hole in the monolithic. As to limitations of claims 4-7 and 9-12, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Tamura's teachings as shown by Palekar because the selection of any of electrode known electrode configurations and catalyst material would have been within the level of ordinary skill in the art.

As to the subject matter of claims 8, 9 and 14-16, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention

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was made to have modified Tamura's teachings from Palekar's teachings to provide different electrode configurations such that the electric field is made between opposed electrodes.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bailey et al. (US 6,803,236 B2) discloses the use catalyst on a honeycomb substrate (col. 3, line 57 through col. 37).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on

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access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kishor Mayekar/
Primary Examiner, Art Unit 1795